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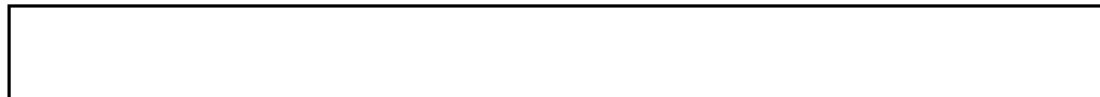
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PHOTOGRAPHIC INTELLIGENCE REPORT

CHENG-TU CHEMICAL FERTILIZER PLANT

CHENG-TU, CHINA

Declass Review by NIMA/DOD



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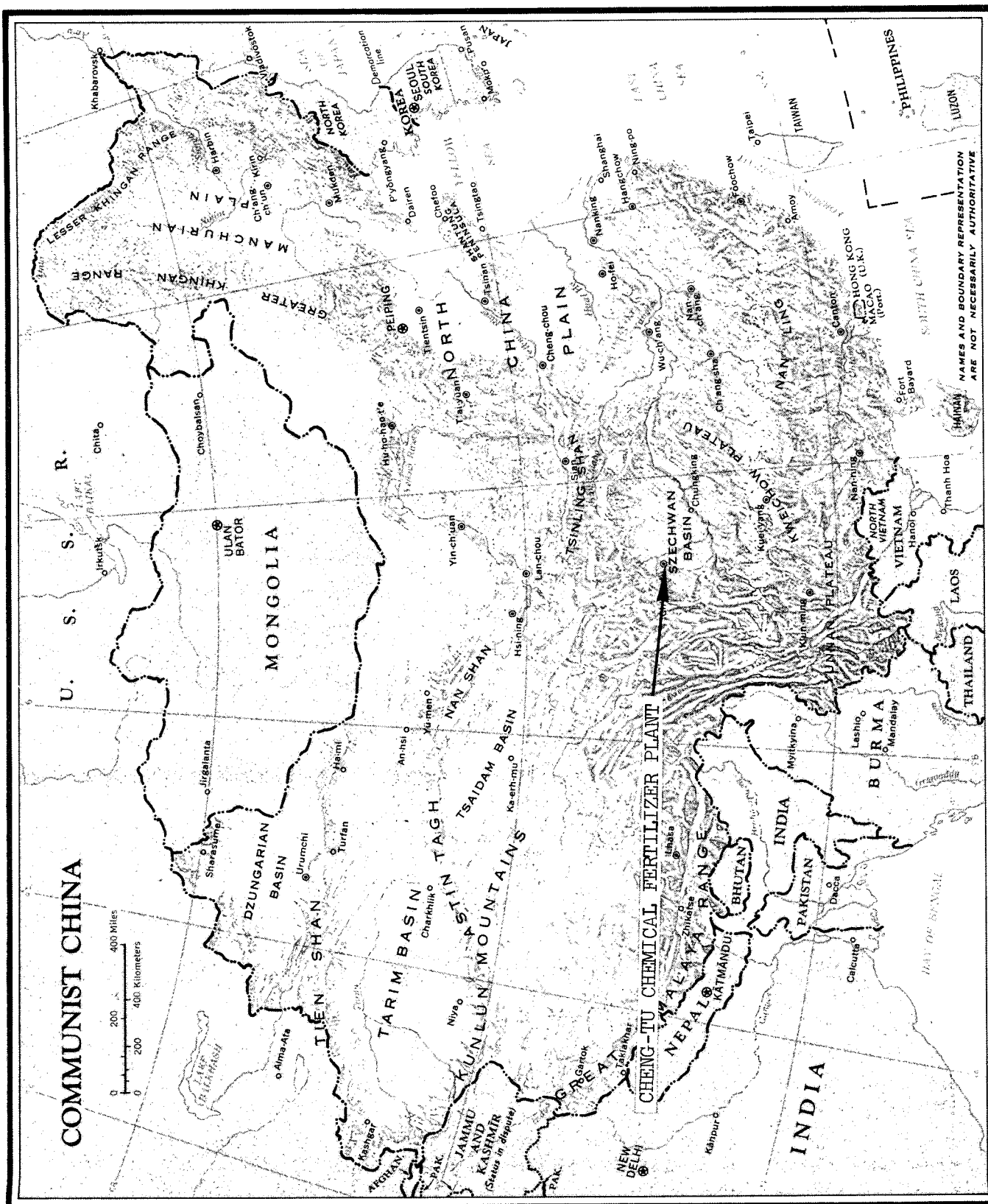
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CHENG-TU CHEMICAL FERTILIZER PLANT
CHENG-TU, CHINA

The Cheng-tu (Szechwan) Chemical Fertilizer Plant is located 16 nm northeast of Cheng-tu and 4 nm west of Chin-tang in the Szechwan Basin, China at the approximate geographic coordinates of 30 52N - 104 15E (Figures 1 and 2).

The plant is divided into two large sections - a nitrogenous fertilizer section and a phosphate fertilizer section (Figure 4). Both of these sections are served by a spur from the Paoki to Cheng-tu and the Cheng-tu to Kuan-hsien railroads. The plant is also served by road.

This report is based on photographic interpretation of overflight and satellite coverage for the period [redacted] with emphasis on the identification of major production facilities and developments within the installation [redacted]

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NITROGEN FERTILIZER SECTION

The limits of and the various processing and support facilities within the Cheng-tu nitrogen fertilizer section correspond to the following discussion and annotations on Figure 9.

The retort building (c) and the boilerhouse (b) use coal from the storage area (a) to generate hydrogen gas. Additional hydrogen is obtained from methane and steam in the contact ovens (e). The carbon dioxide is removed in the purification towers (f). Ammonia is synthesized in the convertors (h) from hydrogen and nitrogen and compressed in the compressor building (g).

Ammonia is oxidized in the nitric acid synthesis section (k). The nitric acid is combined with ammonia in the reactor building (i) to form ammonium nitrate and the solution is sent to the prilling towers (j).

Sulfuric acid is made by the contact process in this section (m). Pyrite from the warehouse (l) is roasted to form sulfur dioxide which is then purified. The sulfur dioxide is then converted to sulfur trioxide and the end products are different concentrations of sulfuric acid. The sulfuric acid is then combined with ammonia to form ammonium sulfate in the reactor building (n) and is then stored in the warehouse (o).

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There are open storage (p) and warehouse facilities (q). The administration area (r) consists of four small buildings and there is a number of watch towers (s) on the perimeter of the plant.

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The nitrogen fertilizer section was operational [] and all processing units had been completed prior to this time. []

[] construction of eleven buildings and one medium size gasholder were completed. One new building is located next to the boilerhouse (b). There are six new warehouses served by railroad spurs in the northern section of the plant (q) and there are four new buildings in the southeast section. This new construction is annotated with (a) on Figure 9. [] to the present there was no new construction, however, there is space in the northwest corner for future expansion.

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25X1 PHOSPHATE FERTILIZER SECTION

The limits of and the various processing and support facilities within the Cheng-tu phosphate fertilizer plant are shown on Figure 11. The perimeter is not clearly defined by a fence or wall, however, it was determined as closely as possible from photography.

The annotations on Figure 11 correspond to the following discussion of facilities:

The phosphate ore is shipped in by railroad (g). It is then taken to the crushing building (b) where it is processed. From there it goes to the mixing and den building (c) where the ore is treated with sulfuric acid from the adjacent nitrogen fertilizer plant to form raw superphosphate. The superphosphate is cured for several weeks and stored in warehouses (e).

Phosphoric acid is synthesized from phosphorus pentoxide and water - the phosphorus pentoxide coming from burning phosphorus in air. This is done in the phosphoric acid section (d).

There are two water treatment plants (a) outside of the phosphate plant. These serve both the nitrogen and the phosphate fertilizer plants.

25X1 The phosphate fertilizer section appears in the late stages of construction and is operational on a limited scale. With the two large mixing and den buildings (c) and the phosphoric acid area, they possibly could be preparing to make triple superphosphate as well as superphosphate. New construction developed [] in the western edge (f) of the plant adjacent to the administration area (h). There are construction materials in the southern section of the plant and the crushing building (b) has been rebuilt.

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FIGURE 3

CHEMICAL FERTILIZER PLANT
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30 52N - 104 15E

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FIGURE 4

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PHOSPHATE FERTILIZER PLANT

NITROGEN FERTILIZER PLANT

AMMONIA FERTILIZER PILOT PLANT

CHEMICAL FERTILIZER PLANT
CHENG-TU, CHINA
30 52N - 104 15E

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FIGURE 5

CHEMICAL FERTILIZER PLANT
CHENG-TU, CHINA
30 52N - 104 15E

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FIGURE 6



CHEMICAL FERTILIZER PLANT
CHENG-TU, CHINA
30 52N - 104 15E

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FIGURE 7

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CHEMICAL FERTILIZER PLANT
CHENG-TU, CHINA
30 52N - 104 15E

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FIGURE 8

NITROGEN FERTILIZER PLANT
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FIGURE 9

NITROGEN FERTILIZER PLANT
CHENG-TU, CHINA
30 52N - 104 15E

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KEY (Figure 9)

- A. Coal storage
- B. Boilerhouse
- C. Retort building
- D. Three gasholders
- E. Contact ovens
- F. Hydrogen purification towers
- G. Compressor building for ammonia synthesis
- H. Converters for ammonia synthesis
- I. Ammonium nitrate reactor building
- J. Prilling towers
- K. Nitric acid synthesis
- L. Pyrite warehouse
- M. Sulfuric acid synthesis
- N. Ammonium sulfate synthesis
- O. Ammonium sulfate warehouse
- P. Open storage
- Q. Warehouse storage
- R. Administration area
- S. Watch towers for guards

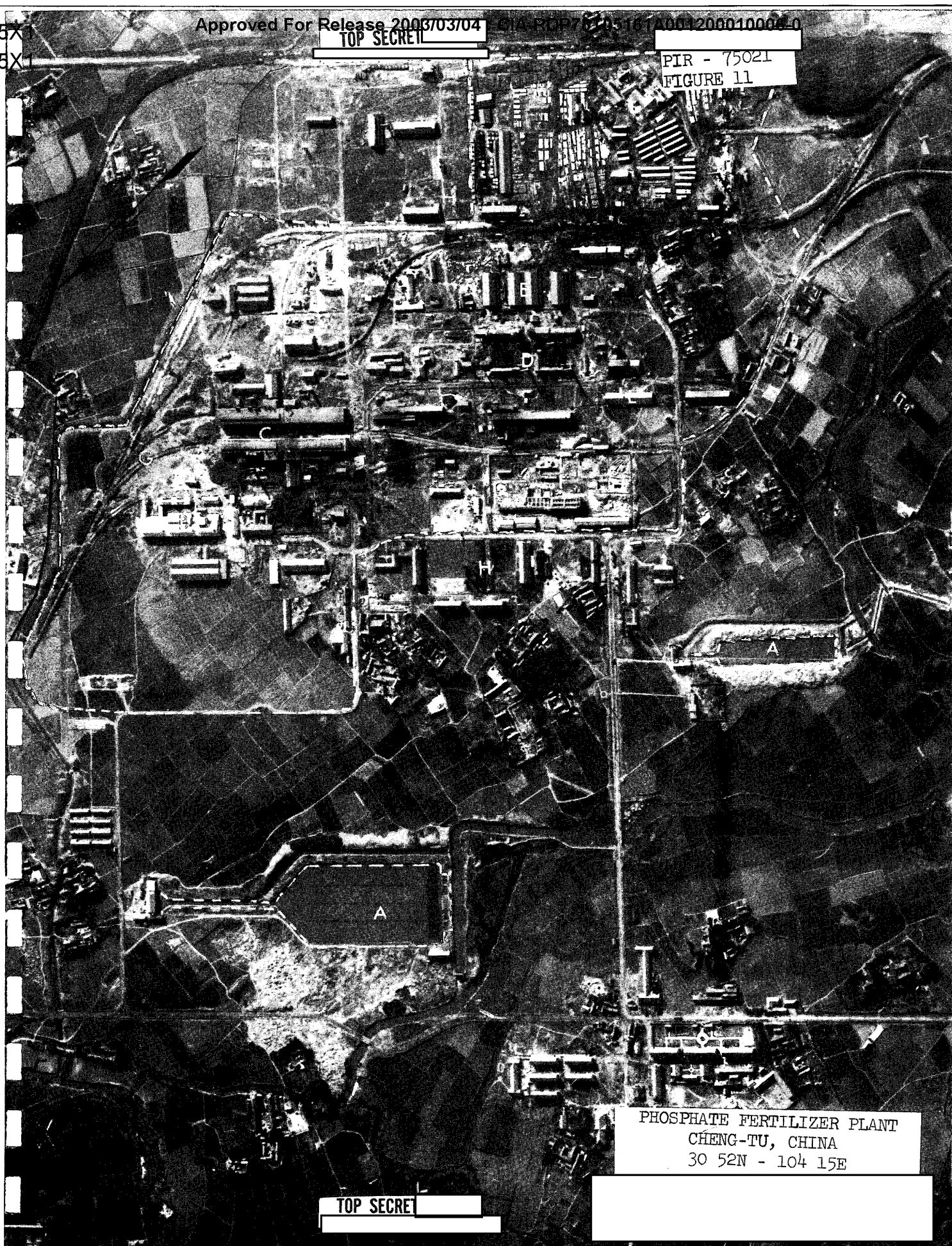
Note: "a" denotes buildings added between



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FIGURE 11



PHOSPHATE FERTILIZER PLANT
CHENG-TU, CHINA
30 52N - 104 15E

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KEY (Figure 11)

- A. Water treatment area and pumphouses
- B. Processing unit - probable crushing building
- C. Processing unit - probable mixing and den building
- D. Phosphoric acid unit
- E. Warehouses and packaging units
- F. Unidentified new construction
- G. Railroad spurs and open storage area
- H. Administration area
- I. Open storage and construction material

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REFERENCES

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MAPS AND CHARTS

General Locator Map, China - 38936, 12-63 (Official Use Only)

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